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This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

B
PC
Claim 1 (previously amended): A method of manufacturing an external force detection sensor comprising the steps of:
providing an element substrate;
forming a recess in a surface of the element substrate;
forming an etching stop layer of an electrically conductive material on the surface of the element substrate having the recess formed therein;
through-hole dry etching the surface of the element substrate using the etching stop layer;
forming a sensor element including a vibrating body, fixed electrodes and movable electrodes on the element substrate;
removing the etching stop layer; and
completing the manufacturing of the external force detection sensor.

Claim 2 (previously amended): A method of manufacturing an external force detection sensor comprising the steps of:
forming a recessed part on a back surface side of an element substrate;
forming a membrane on a face side;
providing an etching stop layer comprising an electrically conductive material on a top surface of the recessed part of said element substrate;
joining the back surface side of said element substrate with a support substrate;
and
forming a sensor element including a vibrating body, fixed electrodes and movable electrodes by dry etching of the membrane of said element substrate;
removing the etching stop layer; and

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completing the manufacturing of the external force detection sensor.

Claim 3 (original): A manufacturing method of an external force detection sensor according to claim 2, wherein the recessed part is formed in a center portion of a back surface of the element substrate.

Claim 4 (canceled)

B1
cont
C1
cont

Claim 5 (previously amended): A method of manufacturing an external force detection sensor according to claim 13, wherein the dummy support substrate and the etching stop layer are removed after the sensor element is formed and, after that, a support substrate with a recessed part formed therein is arranged on a back surface side of said element substrate such that the recessed part of said support substrate is arranged opposite to the sensor element and, then the support substrate is joined with the element substrate.

Claims 6-8 (canceled)

Claim 9 (previously amended): A method of manufacturing an external force detection sensor according to claims 2 or 3, wherein the element substrate is formed of a silicon material, the support substrate is formed of a glass material, and the element substrate is anodically joined with the support substrate.

Claim 10 (previously amended): A method of manufacturing an external force detection sensor according to one of claims 1, 2, 3 or 9, wherein the etching stop layer is formed of an electrically conductive material whose etch selectivity which is the ratio of the dry-etch rate of an element substrate to the dry-etch rate of an etching stop layer is not less than 1.

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Claim 11 (canceled)

Claim 12 (original): A method of manufacturing an external force detection sensor according to claim 10, wherein the etching stop layer is made of titanium or aluminum.

B' int
Claim 13 (previously added): A method of manufacturing an external force detection sensor according to claim 1, further comprising the step of providing a dummy support substrate to support the element substrate during the step of through-hole dry etching of the element substrate to form the sensor element, wherein the etching stop layer is formed between the element substrate and the dummy support substrate.

C' int
Claim 14 (previously added): A method of manufacturing an external force detection sensor according to claim 1, wherein the etching stop layer is formed in a preset sensor element forming area on a back surface side of the element substrate.

Claim 15 (previously added): A method of manufacturing an external force detection sensor according to claim 1, further comprising the step of forming a membrane by machining a preset sensor element forming area of the element substrate from both face and back surface sides, and then forming the etching stop layer on a back surface side of the membrane.

Claim 16 (currently amended): A method of manufacturing an external force detection sensor comprising the steps of:

providing an element substrate;

providing a support substrate;

forming a recess in a surface of the element substrate-element;

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providing an etching stop layer comprising an electrically conductive material on a back surface of said element substrate;

joining the back surface side of said element substrate with the surface of the support substrate having said recess formed therein; and

forming a sensor element including a vibrating body, fixed electrodes and movable electrodes by dry etching of the membrane of said element substrate;

removing the etching stop layer; and

completing the manufacturing of the external force detection sensor.

B' uncl
C' uncl
Claim 17 (newly added): A method of manufacturing an external force detection sensor according to claim 16, wherein the etching stop layer is formed of an electrically conductive material whose etch selectivity which is the ratio of the dry-etch rate of an element substrate to the dry-etch rate of an etching stop layer is not less than 1.

Claim 18 (newly added): A method of manufacturing an external force detection sensor according to claim 196, wherein the etching stop layer is made of titanium or aluminum.